

Project Revenues

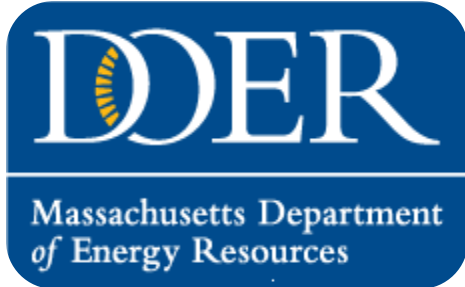
■ Revenues (green)

- Tax Credits
- SREC Proceeds
- Electricity Savings

Owner Name			
Solar System Project	40	kw system	Cost per KWT
			4200
Cost	\$168,000		
Less tax credit	\$50,400	30% of cost	
Net Cost	\$117,600		
		Loan Rate	loan term - months
		4.25%	84
Monthly Loan Pmnts	\$1,621	Farm Credit East	
Total of payments	\$136,165.69		45
SREC Proceeds (yrs)		(\$12,825)	SREC*
7	(\$89,775)	Min. \$300/SREC)	annual
		\$285	10 years total
Net costs	\$46,391		*SREC: Solar Renewable Energy Credit
Less:			
Electricity savings		45,427	kwh production
\$6,360	(\$44,519)	0.14	price/kwh
(per year)			
		3.12	kwh production/day-average
Net costs	\$1,872	124.8	total (x system kw)/day
		45,427	kwh/year
Deprec expense	(\$29,400)	25.00%	tax rate
Net costs	(\$27,528)	(\$3,932.57)	per year cost
			\$22



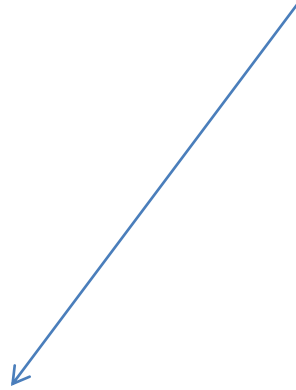
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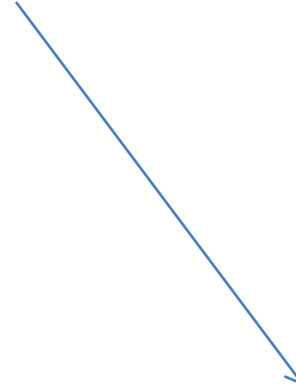
Solar Project Revenues

***Net Metering
&
Solar Renewable Energy
Certificates(SRECs)***

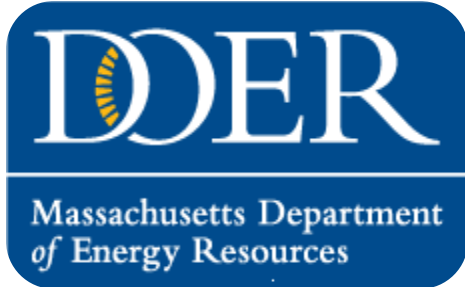
Solar Projects Earn Revenue By...



Generating
electricity
(net metering)



Generating
environmental
benefits
(SRECs)



Net Metering

Net Metering: Basic Concept

- Net metering is an incentive program to encourage customers to install distributed generation
 - Customers offset own electricity usage
 - Customers are compensated for any electricity they generate and don't use

Net Metering: Basic Concept (Cont.)

- If consumption exceeds generation, customer pays for net kWh consumed
- If generation exceeds consumption, customer receives credit on bill for net excess generation



Who offers net metering?

- Investor-owned utilities (NSTAR, National Grid, WMECO, Unitil) are required to offer net metering
- Municipal utilities are not required
- Need to know who the electricity provider is to your project

Net Metering Example: Solar PV Facility on School

- PV System generates 60,000 kWh/month
- School months
 - Electricity usage = 80,000 kWh
 - School is charged for 20,000 kWh
- Summer months
 - Electricity usage = 10,000 kWh
 - School is credited for 50,000 kWh



} = Excess Generation

Key Question:

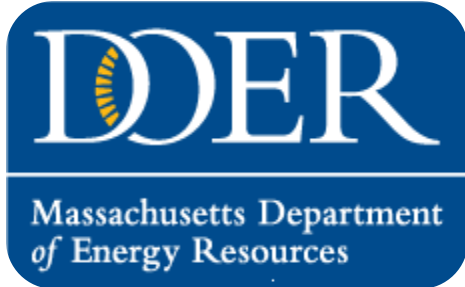
How Much Net Metering in MA?

- Statute:
 - 3% cap on “private” projects
 - 3% cap on “public” projects
- Caps are based on the distribution company’s peak demand
- Net metering queue now in place
- Small net metering systems are exempt from the net metering caps

Increased as
of 8/3/12



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Solar Renewable Energy Certificates (SRECs)

How does it work?

- MA program to pay renewable project owners for environmental benefits
- Renewable Portfolio Standard (RPS)
 - Electricity generators (“compliance entities”) must obtain % of load from renewables
 - Meet this obligation by purchasing Renewable Energy Certificates (RECs)
 - Solar Carve-Out Program (2010) – part of obligation must come from solar (purchase of SRECs)

Example: Typical Residential Project

- 5kW system generates 6,000 kWh per year
- 1 SREC = 1,000 kWh or 1MWH
- This project generates 6 SRECs every year
- System owner sells SRECs to compliance entities (often through an SREC aggregator)

Solar Carve-Out Program: Basics

- Program is **market-based**, i.e. SREC price is not set by regulation
- **Alternative Compliance Payment (ACP)** amount = effective SREC ceiling price
- SRECs “good” for **one compliance year**
- Unsold SRECs can be placed into the **Auction** – if sold, seller receives price of \$285

The Auction: Clearing Up Misconceptions

- Takes place once a year
- \$285 is the auction price – not a set floor price for the market
- If projects want quarterly revenue from SRECs, sell on the spot market, receive whatever price the market sets (higher or lower than \$285)
- If projects wait until the end of the year, they can sell SRECs through auction at \$285

Review of Program Design Features

- **Adjustable Minimum Standard** - obligation amount for compliance entities adjusts each year
- **Alternative Compliance Payment** – effective “ceiling price”, ten-year rate schedule
- **Auction**
 - Designed to clear unsold SRECs
 - Price of \$285

Other Solar Carve-Out Facts

- SRECs are minted on a quarterly basis
- Solar Carve-Out Program designed to incentivize up to 400MW of solar development
 - About 160 MW currently installed and qualified
 - Expect to reach 400 MW in 2-3 years = 6,000-7,000 projects, 80% residential and small commercial
- Fully expect industry to continue growing beyond 400 MW, hope to expand program

Questions?

DOER Solar Carve-out Website: www.mass.gov/energy/rps then click on “RPS Solar Carve-out”

Contact: DOER.SREC@state.ma.us
or 617-626-7300

Appendix

Addressing Common Myths and Questions

- What triggers the volatility in pricing of SREC?
- Is the SREC price guaranteed for 10 years?
- How long can you count on the SREC price?
- Is there a floor on the SREC price?
- How long do you have to wait for SREC payments once solar system is operational?

Key Question: What can a Host Customer do with Net Metering Credits?

- Option 1
 - Use the credit for the Host Customer's electric bill
- Option 2
 - Host Customer can allocate credits to different accounts (yours or other customers)
 - Thus, generation in one location can offset electricity costs in another location (a.k.a. virtual net metering)

SREC Adjustable Minimum Standard

- Yearly percentage obligation placed upon compliance entities
- Adjusted each August according to formula set in program regulation
- Formula for next year takes into account actual SREC volume from previous year and projected SREC volume for current year

SREC Alternative Compliance Payment (ACP)

- Price RES's must pay for every MWh they are short of meeting their obligation
- 10-year forward rate schedule has been proposed to reduce market risk and uncertainty
- Will maintain current rate through 2013 before reducing by 5% annually

SREC Opt-In Term

- Number of quarters a qualified project has the right to deposit SRECs into the Auction Account to be assured the floor price
- Term is currently 10 years but can be adjusted each July for subsequent qualified projects

SREC Auction Mechanism

- Open every year from May 16th – June 15th
- Any unsold SRECs may be deposited
- Auction takes place no later than July 31st
- Deposited SRECs are re-minted as “extended life” SRECs (good for compliance in either of following two compliance years)
- SREC owners will be paid \$285/MWh for each SREC sold through the auction

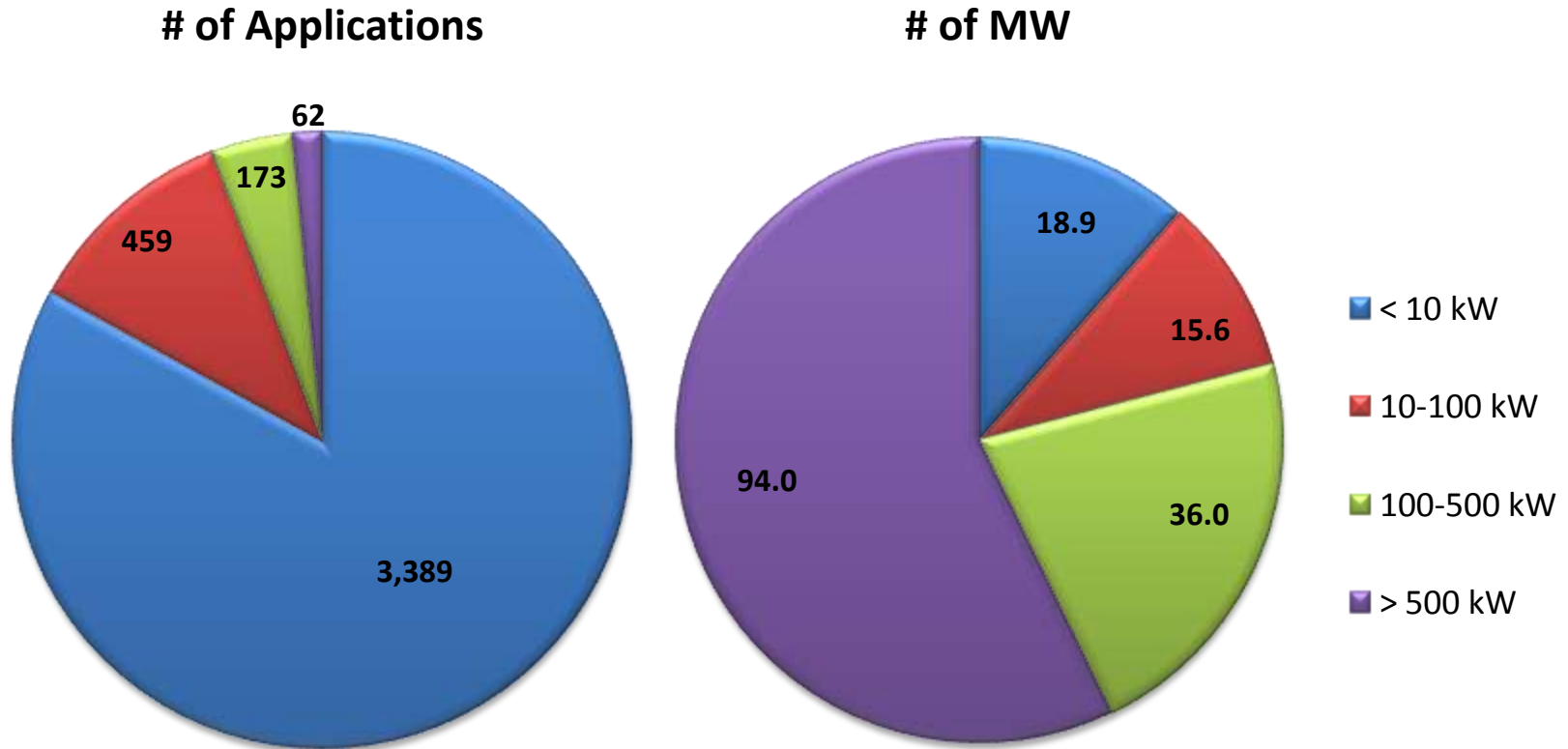
Current SREC Program Statistics – 12/1/12

- Over 4,000 applications received
- Over 3,700 qualified units
- 155 MW qualified
- Nearly 138 MW of qualified projects installed
- 2,741 SRECs created in 2010
- 26,598 SRECs created in 2011
- More than 100,000 SRECs expected to be created in 2012

	Number of Systems	Capacity (MW)
Applications Received	4,086	164.4
Applications under Review	299	9.5
Applications Qualified	3,787	154.9
Qualified but Installation Incomplete	19	17.3
Qualified and Installed	3,768	137.6

Current SREC Program Statistics – 12/1/12

Activity by System Size



Frequently Asked Questions

- How long are SRECs good for?
 - SRECs must be sold by the end of the Compliance year. For example 2012 SRECs minted at NEPOOL GIS on either July 15, Oct 15, Jan 15 or April 15, 2013 must be sold by June 15, 2013, the end of the 2012 trading year at NEPOOL GIS.
 - Extended Life SRECs bought from the auction are valid for compliance for either two or three years, depending on the round of the auction in which they were bought.
- Why would someone buy at the Auction?
 - Purchasing SRECs in the auction gives a buyer flexibility to use the SRECs in one of the following two or three Compliance Years. Thus, it is a useful way to either hedge against or speculate on potential increases in SREC prices that may be seen in one of these years.
- What is the difference between MA market and the other SREC markets in the USA?
 - The Massachusetts market is unique from other markets because of the many design features that take into consideration market conditions and maintains a reasonable balance between supply and demand of SRECs. These features include the formula to appropriately adjust the minimum standard, the ability of projects owners to deposit unsold SRECs into the Auction and assurance of the auction price, the opt-in term and its ability to throttle project development, a 10 year forward ACP schedule, and the 400 MW program cap.



F.A.Q. continued...

- Why are SREC prices currently less than \$285 on the spot market?
 - It appears the 2012 SREC market will be oversupplied; in an oversupplied market, prices will fall, in a short market, prices will tend towards the ACP rate. At the beginning of the 2012 trading season, some project owners may opt to sell their SRECs at prices being offered by buyers below the auction price, rather than waiting for the end of the trading season to have recourse of the auction and the auction price.
- How long will my project generate SRECs?
 - Your project will generate SRECs from the time it is qualified until the program ends.
- When does the program end?
 - After we have reached the program cap of 400 MW of qualified projects installed, DOER will determine and announce the remaining duration of the program, which will be equal to the longest remaining opt-in term. After this time, the qualified units will be merged with the RPS Class I program and thereby continue to generate Class I RECs.
- What happens after we reach 400 MW?
 - Newly built projects will not be eligible for the Solar Carve-out and qualified projects will continue to generate SRECs.



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